"Dewey for Teachers": An Empirical Evidence in Its Favor.

An experimental program designed to test an inservice method for introducing the practical aspects of John Dewey's educational philosophy to teachers was received positively by 17 of the program's 20 volunteer participants. The program used a limited version of R.A. Gibboney's "Toward Intellectual Excellence: Some Things to Look for in Classrooms and Schools," a document that introduces Dewey's philosophy, categorizes Dewey's thoughts into 24 specific practice-oriented criteria, and provides materials with which teachers can evaluate the extent to which they and the curricular materials they use apply Dewey's concepts. Dewey's methods were applied to the presentation of the inservice program itself. The experimental process was flexible, allowing the researchers to respond creatively to the participants' needs, developing each phase of the process after evaluating prior phases. Interviews with the participants revealed that most of them understood and agreed with the program's ideas, found the program format beneficial, and made practical use of what they learned. Appendixes present sample program materials. (PGD)
"Dewey for Teachers": An Empirical Evidence in its Favor

by

Tamar Ariav
Board of Jewish Education, Inc.
426 West 58 Street
New York, NY 10019

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The role of philosophy in educational theory and practice is an issue extensively discussed (see, for example, Beyer, 1983; Siegel, 1981; Soltis, 1981). While some view this role as essential and crucial, others believe that questions concerning epistemological aspects are not in the province of philosophy but belong more properly to other domains.

The perception of philosophy as the parent-discipline of education and the realization of the commitment to line theory and practice imply that philosophy must become a practical means for educators. Specifically, it should be used to understand and interpret problems which confront practitioners. For a teacher to be able to connect theory and practice and to make a meaningful use of philosophy within his own experience, he does not need to become a philosopher or a theorist. What a practitioner needs, though, is a simple, neat and clear presentation of philosophy in a way that will make sense in his context and environment. This task is a difficult one because in the course of simplification the depth and complexity of ideas might diminish; the very language we use is significant and essential in interpreting ideas and transcending hidden and implicit sensitivities.

Among the educational philosophies that could be presented to practitioners to facilitate improved practice, that of John Dewey is standing out.
Dewey's philosophy had had a strong impact on school practices especially during the Progressive Era (Cremin, 1964), and his contribution to the field of education in general and to the curriculum field in particular cannot be underestimated (Kliebard, 1981). Many curricularists have worked out of a Deweyan paradigm, elaborating it to illuminate the nature of educational activities and to achieve a better understanding of educational processes. The Reconceptualists, for example, can be viewed as an extension of a tradition that grows out of Counts, Rugg and Dewey (Benham, 1981). There is a claim, though, that Dewey's ideas are somewhat too simplistic for the educational scene of the 1980's and that richer, more sophisticated lenses are necessary to analyze and grapple with it (Macdonald, 1981). This perception might explain the efforts invested by contemporary curricularists to gain new insights into curricular issues by applying methodologies borrowed from various disciplines.

Our conviction that Dewey's philosophy is worth knowing led us to try and present it to teachers in the hope that an appropriate presentation will influence their perception and action (Ariav, 1983). We believe that Dewey's philosophy is holistic (no arbitrary dichotomies), comprehensive (uses various perspectives such as ethical, aesthetic and social in the examination of ideas), and coherent (no inconsistencies). We feel that many of Dewey's ideas go beyond time limits and particular socio-political conditions. His is an educational philosophy which is still in the mainstream of many theorists and practitioners whether or not they are aware of it or connect it with their work.
It was precisely the purpose of this study to see to it that Dewey's educational philosophy will be presented to teachers in a way that is meaningful and practical to them. Specifically the problems were:

(a) Is it possible to extract Dewey's educational philosophy for today's teachers in a way that would make sense to them?

(b) How can teachers be effectively introduced to these ideas?

(c) Would such an attempt have an impact on their curriculum and instruction, awareness, understanding and implementation?

Guided by these questions we engaged in a three year project, in which Dewey's educational philosophy was extracted into a short manuscript (Gibboney, 1980), and then introduced to teachers and examined for its practical effects (Ariav, 1983). The extent of success of the study can then help to determine if this approach is useful in bridging theory and practice.

Extracting Dewey's Educational Philosophy for Teachers

The purpose of the extraction was to provide teachers with Dewey's fundamental ideas in a form amenable to immediate use and practical application. Since Dewey's voluminous writings are sometimes vague and complicated there was a need to extract the major educational ideas, write them in a simplified fashion, and reorganize and consolidate them. This "Dewey for Teachers" version was entitled Toward Intellectual Excellence: Some Things to Look for in Classrooms and Schools (TIE) (Gibboney, 1980). (The selection of the
name was inspired by Furth (1970), whose "Piaget for Teachers" is a short and simplified summary of Piagetian theory. The manuscript, 40 pages long, includes three parts. The first is a rationale and an introduction, the second is the 'translation' of Dewey's educational ideas into criteria, and the third is an evaluation kit for the teacher. These three components are briefly described below according to their centrality in TIE.

The second part of TIE is its core. It includes 24 criteria*, divided into four categories: objectives, subject matter, thinking and experience, and instructional method. There is a certain arbitrariness in separating the criteria into four groups, especially when both the criteria and the categories are interrelated. However, for the sake of clarity and simplicity, this division serves a practical function.

A criterion is a precriptive or descriptive statement that extracts the essence of Dewey's thoughts regarding a particular issue. It is usually a cluster of interrelated ideas that support each other. For instance, a criterion under the category 'objectives' states: "Objectives are tentative and emerge from the learning-teaching process; objectives can be modified by the teacher or the learner as the process of learning unfolds" (Criterion 3). To simplify the ideas in each criterion they are explained and justified, and at least one example shows what each means in a classroom situation, or how it could be applied in a practical context. Examples are taken from various subjects and different grades to indicate the utility of TIE to most subjects and grade levels. Two of the criteria in TIE are fully presented in Appendix A.

*In the experimental version of TIE only 18 out of the 24 criteria were used.
The last part of TIE includes two forms which together provide an evaluation kit. One form is a rating-scale sheet that attaches to each criterion a five-point scale. Criterion 3 above, for example, has the following rating scale:

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectives</td>
<td>objectives</td>
<td>objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>are highly flexible</td>
<td>allow some flexibility</td>
<td>allow no flexibility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The other form is a profile sheet for the actual application of TIE to various functions, such as analysis of the quality of curriculum materials. The profile sheet was designed to allow teachers to use Dewey's ideas in circumstances that arise in practice. By combining the evaluation points on the eighteen rating scales a profile is created that indicates in a visual way how the subject of evaluation scores in relation to the 'Dewey score' (a straight line which connects all the 5's). Both the rating-scale sheet and the profile sheet (as applied to From Lions to Legends) are provided in Appendix B.

The introduction explains how the spirit of TIE is consistent with various writings of Dewey, and especially with his magnum opus Democracy and Education. The primary values reflected in TIE are presented in its rationale are directly derived from Dewey (Gibboney, 1980, Part I, p.6):

The primary purpose of formal education is to develop the intellect and an ethical system of values; mind (intelligence) and knowledge are dynamic not static; the quality of learning (or of a school) is implicit in the means (processes) employed in teaching and learning—never in the ends alone (history) or in test scores used partially to assess learning; significant improvements in
school quality will come from teachers and principals systematically testing out ideas over time in the practical context of their school based on a comprehensive analysis of the curriculum materials and learning processes used.

TIE reflects Dewey's holistic view (in contrast to pervasive dualisms): the learner (subject) and the curriculum (object) are linked through experience; the individual and society are interrelated by means of communication; and all learning (formal and informal) requires a unity of mind and emotions. Dewey's social epistemology is also interwoven in many of TIE's criteria. As such, the criteria is TIE do not oversimplify the reality that teachers know and must deal with in the classroom. Although TIE might sometimes appear abstract and complex, it nevertheless represents an honest effort to treat some of the more important educational ideas of Dewey in a more popular manner without sacrificing the quality and depth of these ideas. The latter, then, are more selective and condensed, logically organized and annotated with examples.

The development of TIE followed through a series of versions and the final one withstood content validation by a few experts, both in curriculum and educational philosophy.

The Study

In order to examine whether or not TIE really fulfills its original purpose we conceived a study with the following premise.
**School-based program:** We firmly believe in a school-based inservice whereby participants feel that the program is relevant, interesting and significant for their personal and professional growth. Although this study was not designed as a typical inservice education, it is nevertheless based on some major conclusions about practices of inservicing (Burrello and Orbaugh, 1982), which among others claim that the school site should be the focus of inservice education activity.

**Responsive program:** Based on research on inservice education, the program introducing teachers to TIE had to be flexible and only structurally pre-determined. Burrello and Orbaugh (1982), for example, say that a successful program should be grounded in the needs of the participants. The implication of such an approach was that only a general design could be planned for the study, leaving enough leeway for alterations and changes for specific circumstances.

**Voluntary participation:** The incentive for participating in inservice education programs should be centered on intrinsic professional rewards (Burrello and Orbaugh, 1982). Therefore, placing a program to introduce teachers to TIE in a credit course does not only detach the program from its natural environment -- the school -- but also shifts the participants' incentive to external rewards.

**A program for teachers:** The decision to conduct a program specifically for teachers (rather than educators with primarily administrative responsibilities) was based on our belief that teachers are most crucial and influential in determining the quality of the learning process through the design of a teaching-learning environment.
A program consistent with Deweyan philosophy: It would seem rather contradictory to try to introduce TIE to educators while applying a linear, structured and predetermined instructional process. Hence, the nature of the program had to be consistent with TIE's spirit, so that the document and the strategy used to introduce it to teachers will complement each other and will create a cohesive whole.

The logistics of an on-site program with volunteer teachers dictated a condensed schedule of four meetings. The components were:

(a) The researcher provided an introductory session, in which TIE was presented to the teachers, emphasizing its structure and its potential usages.

(b) Assignment: participants read the whole manuscript before the next meeting, and selected a curriculum material to be brought to the next meeting to be "TIE-examined" (i.e., analyzed along the criteria in TIE).

(c) In the first workshop at least four criteria from TIE -- one from each of the four groups: objectives, subject matter, thinking and experience, and instructional method -- were extensively discussed and applied to the curriculum material each participant chose.

(d) Assignment: every teacher applied the criteria not discussed in (c) to the same curriculum material, and selected another curriculum for analysis in the second workshop.

(e) During the second workshop a full analysis of the second curriculum material was conducted while clarifying any criteria which were not
clear yet. Participants shared analyses, arrived at practical conclusions concerning their analyses, and engaged in a curriculum discourse.

(f) Assignment: each teacher applied TIE at least twice. The range of possible applications was wide (e.g., evaluation of school climate, structuring a staff development program, and developing curriculum materials).

(g) Every participant met with the researcher for an interview and shared with her the results of (f).

In all four sessions teachers had opportunities to discuss, clarify and challenge the criteria in TIE. Analysis of curricula, such as Open Court Language Arts Program, Science - Understanding Your Environment, and Kleidoscope, served only as a means to help teachers understand TIE through an application. Since they selected the materials the teachers had an interest in those evaluations and could often benefit from them immediately. The teachers were encouraged, however, to use TIE for various purposes, especially in stage (f) above. Also, it should be noted that TIE was not presented to the participants as a "Dewey for Teachers" manuscript, but rather as a philosophical scheme that could be applied to various educational contexts. Although this connection was not made explicitly by the research (in order to avoid biases), every participant could have made them by himself while reading throughout TIE.

Twenty teachers from two school districts (nine from one district and eleven from the other) volunteered to take part in the program. They
volunteered based on a project description which was distributed to them, explaining the goals of the study, its approximate length, and its potential benefit for a teacher. Upon signing up with us the participating teachers had no pre-conception of TIE and therefore approached it from a neutral perspective in methodological terms. The teachers knew in advance that they will have only limited release time from school for participation, and that their preparation for each meeting (assignments) were very important. This meant that every participant was required to invest in the program between ten and fifteen hours over a period of about two months. The teachers were strongly involved with the study: they determined the kind of application they would like to do, they divided themselves into four small groups, and they were those who decided in which school to meet, when and for how long. Their commitment stayed usually high and most of them took the program very seriously. The majority of them were women in their thirties, who had a graduate degree, an average of 12 years of educational experience, and some kind of specialization (e.g., special education, reading specialist). A more detailed description of the teachers as well as their school districts is provided in Ariav (1983).

Methodologically, the study assumed a field research approach. Schatzman and Strauss (1973) view the field researcher as a strategist who is at once pragmatist, humanist, and naturalist. He develops procedures as he goes, doing most of the operations simultaneously. He assumes reality to be infinitely complex, and therefore instead of controlling the environment and emphasizing reliable methods for data collection and analysis, he grounds his understanding and sometimes even the problem, in data generated through a variety of methods, especially observations and interviews. The
literature on field research borrows heavily from Grounded Theory (Glaser and Strauss, 1967). They term theoretical sampling the process in which group or individuals are chosen by the researcher for their potential usefulness in generating theoretical categories and properties. The most distinctive feature of theoretical sampling is the interlocking character of data gathering, coding and analysis. Unlike traditional research, where data are all gathered first and analyzed later, in this procedure the researcher jointly collects, codes, and analyzes his data and then decides about his next step in the field.

Adopting this methodological approach to our study implied that: (1) every planned step was only tentative and needed to be changed according to the circumstances; (2) we had no pre-conceived hypotheses or assumptions about the processes or the results of the study; (3) emphasis was put upon discovery of meaningful information and exploration of a new territory rather than verification or generalization; (4) the study was conducted on a small scale, sacrificing scope for depth; (5) participant observation was the major tool for data collection; and (6) a procedure of content analysis was developed for the analysis of the data.

The meetings with the teachers were tape-recorded and a log entry was made right after each one. Analysis of data influenced both, the next meeting with the same group and meetings with other groups. No two workshops were the same not only because of the difference in group composition, but also because of the impact of previously accumulated information. Data were transcribed and carefully analyzed according to specific categories corresponding to the research questions of the study.
Results

Because Dewey's educational philosophy was presented in this study by TIE, the general problems that led to this research had to be substituted by specific questions related to TIE rather than Dewey:

(1) Did the participating teachers understand TIE? Did it make sense to them? To what extent did they agree with the ideas in TIE?

Seventeen out of the twenty teachers claimed that by the end of the project they understood the criteria in TIE, and this did often coincide with our observations. We did not have an opportunity to discuss each of the eighteen criteria with every participant individually, but during the meetings the teachers raised questions about the criteria and challenged them in a way indicative of understanding the ideas and their application to practice. The exact statistic does not seem to be crucial here; what is important, though, is that Dewey's philosophy could be generally understood by teachers and applied in the realm of their educational world.

Some of Dewey's ideas were more difficult for teachers to understand than others. These were (see Appendix B): interrelation of instructional elements (#24), importance of active thinking (#23), relations between cognition and affect (#22), limits of skill and drill (#19), general significance of subject matter (#12b), and intrinsic value of objectives (#8).
Interestingly, criteria difficult to understand were found in all four groups in TIE (i.e., objectives, subject matter, thinking and experience, and instructional method), and did not seem to have any obvious elements in common. Teachers blamed the difficulty in understanding some of the ideas on few characteristics of TIE that might have been especially problematic in these criteria. They claimed, for instance, that the 40 page manuscript is too long and too wordy and academic. They felt that TIE does not provide enough concrete examples for language arts and reading on the elementary level, and that the explanation of a criterion is sometimes confusing or not directly related to it. Hence, it is possible that the very structure and style of TIE obscured some of the ideas it was supposed to clarify and simplify.

We found no correlation between the level of comprehension of TIE and valuables such as age, sex, years of experience and level of education. We observed, however, that teachers of the gifted and reading and math teachers experienced more difficulties in understanding TIE throughout the study. Science, social studies, special education and language arts teachers, on the other hand, came to grips with the criteria in a shorter time. It did not surprise us that teachers of structured and sequential subjects as math and reading had to go a farther distance to understand Dewey, but it amazed us that teachers of the gifted (4 out of 20) experienced a similar process.

It is important to note that the participants felt that the interaction during the workshops and the applications of TIE to various curriculum
functions were instrumental to their understanding of it. Even the interview was perceived as a part of their learning experience and helped to clarify a few last points which were still vague. (A more detailed discussion of these issues is provided later on in relation to the second question of the study).

All the participants knew very little about TIE when they joined the project and therefore had a kind of 'neutral' attitude toward TIE. Whatever they felt about it upon termination of the study was mostly due to their participation in the program. Seventeen of the twenty participants had established a positive attitude toward TIE by the end of the project although the degree of strength of this attitude varied from slightly positive (4) to very positive (13). One teacher was reluctant to express his attitude, and two teachers developed a negative attitude toward TIE's format. While these two participants could not differentiate between TIE's format and its content, the other seventeen seemed to be able to judge the philosophy behind TIE independently of the structure of TIE. Moreover, even the difficulty in understanding a few criteria did not diminish the attitudes of these teachers toward TIE and had no impact on their agreement with its philosophy. Their evaluation of TIE, both from philosophical and practical perspectives, was a reflection of a general impression and assessment of the document. This explains why a teacher who claimed he did not understand three of the eighteen criteria in TIE and criticized TIE's format still felt positively about it and agreed with its educational philosophy.
All the participants declared that they agree to a greater or lesser extent with the educational philosophy reflected by TIE. The very enthusiastic statements were: "TIE and my philosophy are like hand and glove"; and "I am with TIE very strongly". The most reserved reactions were: "I do agree with it but I feel that TIE is too affective and open"; and "I agree with all the criteria although with some more than with others, depending on the grade level".

Several teachers expressed concerns with regard to the possibility of implementing TIE's philosophy in the schools. They said that although TIE's philosophy is close to their intrinsic beliefs, this is not always the philosophy of the school board or curriculum people. "Teachers are not allowed to use such a liberal philosophy", said one participant. Such philosophical discrepancies between policy decision makers and executers might cause various difficulties for teachers and have them act against their beliefs because of external constraints.

(b) Did the teachers think that the meetings served as a useful vehicle to introduce them to TIE?

On the whole, the participating teachers felt that the meetings, workshops and assignments in between were crucial to their understanding and appreciation of TIE. It was found that the stage between the last workshop and the interview was a very significant part of their learning experience. Moreover, the interview -- as a summing-up activity and a means of data gathering from the research's point of view -- was for many teachers an integral and important part of their learning process. Group discussions and opportunities for application contributed additional dimensions to the understanding and appreciation of TIE vis-a-vis a 'passive' reading of TIE. That is, if not
presented through an inservice, a course or a special program, TIE needs to be further simplified to enable teachers to understand it on their own. (Specific recommendations for further simplification of TIE are proposed by Ariav (1983)).

(c) Did TIE help the teachers to sensitize their curriculum awareness, understanding and implementation?

Through the workshops, applications of TIE and the individual interviews it became apparent the teachers' awareness and understanding of various curriculum issues were enhanced and reflected in practice. Two conspicuous results of this exposure were more deliberate modes of curriculum materials selection and implementation, and recognition of the need to engage in a curriculum dialogue with colleagues. The former was a result of the application of TIE to the function of curriculum materials analysis, and was an indication of the gap that exists between what teachers know and what they need to know about curriculum and instruction. The latter result developed as teachers started to realize how unnecessary and even detrimental the lack of communication among them is. A math teacher, for example, 'discovered' than many of his problems are shared by his colleagues, the social studies and special education teachers.

Discovering that they all need to know more about curricular issues and instructional concerns the teachers felt more comfortable expressing overtly their thoughts about TIE:

- "It makes teachers aware of their own educational values".
- "It made me aware of specific things I should look for in the curriculum".
- "It made me think of what I am doing, why I am doing it, ten other ways to do it, and maybe I shouldn't do it at all".
- "I found out that you can look for the same things in various subject areas".
- "I see training on something like TIE as being 'helpful in preparing a mindset".
To sum up, TIE did enhance teachers' awareness of various curriculum and instruction issues by helping them to understand that the complexities of educational processes cannot be over-simplified, reduced to managerial procedures or quantified in all aspects. It offered them a philosophical framework that had an immediate influence on the ways in which they evaluated materials, their own teaching and curriculum implementation, and the climate of their schools. It also made them feel accountable (in the true and honest sense of the word) for their work as active decision makers, who are able to substantiate what they do as educators.

Discussion

Under the assumption that TIE is a succinct summary of Dewey's educational philosophy it is then possible to conclude that Dewey's ideas still make sense to teachers today. This "Dewey for Teachers" version was received positively by the participating teachers, was generally understood by most of them, was perceived as meaningful and relevant to their work, and influenced a few aspects of their practice. As such, it provides an evidence in favor of Deweyan philosophy as being currently applicable to at least some schools. Probably many educational settings will be reluctant to expose themselves to a philosophy that sometimes threatens their political climate, one which was developed over half a century ago and connotes various slogans to different people. Yet, our exploratory experiment does show that if Dewey's ideas are extracted in a structured and systematic manner, they can relate to them and internalize them. Moreover, in the process of familiarizing themselves with Dewey's philosophy the teachers began a dialogue about crucial elements which determine the quality of their teaching, a curriculum discourse about issues
otherwise hidden or surpressed.

Our study represents a specific avenue taken to help bridge between educational theory and practice namely, the introduction of Deweyan philosophy to teachers. The underlying assumption of this exploratory study was that educational philosophy should provide a broader context for educational practice. The question was, however, how could this be done. This research can be viewed as a case study, as an attempt to decrease the gap between the 'two cultures', theoreticians and practitioners, by way of introducing practitioners to a specific educational philosophy and organizing philosophical thought in a way meaningful to practitioners. The overall success of this approach might have a few implications for those concerned with tightening the link between philosophy and the field.

First, the extraction of a philosophy into a concise manuscript seem to be a rather attractive direction to take in order to present it to practitioners. Our experience indicates that such a summary must be clearly structured (e.g., have a set of criteria divided into categories), and include a means for application (e.g., an evaluation kit). Also, the results of the study suggest that a scheme of that nature should be relatively short (i.e., less than ten pages), written in a practitioner style (i.e., have less explanations and more concrete examples), and use day-to-day language (i.e., avoid academic and sophisticated wording). The fact that TIE, for instance, was a too complex document for the participating teachers (and would probably be more so for an 'average' teacher), calls for maximum simplification even at the cost of some degeneration of ideas and concepts. Hence, the packaging of a philosophy translated for practitioners is of crucial importance and must be carefully executed.
Second, the process used to introduce teachers to a philosophy might not only be an effective vehicle for better understanding and appreciation of the latter, but even be an essential element. This seems to be the case especially when the document itself is cumbersome and does not have the characteristics specified earlier, or when it represents a rather radical philosophy. It is quite obvious that the more opportunities practitioners will have to discuss and apply the philosophy, the better will be their understanding and implementation of that philosophy. It is not clear, though, what effects will be reached if the participants will not be in agreement with the philosophy introduced to them. In our study, the teachers' general agreement with Dewey's philosophy did have a positive impact on practical aspects.

The design and operationalization of a strategy to introduce teachers to philosophy in a way similar to the one in our study is a costly process in terms of human resources, time and money. This means that such introductions must be on a small scale (i.e., incremental change process) or that they must be packaged too and allow for local sources to carry them out. Another viable option is, of course, the development of more efficient strategies. One should note that as long as a philosophy is presented together with an accompanying program it will be difficult to assess the extent to which each of the two is responsible for developing a certain attitude toward the presented ideas and for creating a useful base for applying them to practice.

While these two directions are somewhat controllable by the researcher, the third is of a different nature. Having more philosophical teachers would undoubtedly increase the success rate of similar studies. In fact, we were
positively surprised to observe that some teachers are ready to handle heavy ideas and are eager to deal with richer and more complex thoughts of educational realities than those endorsed by various palatable but disappointing fads. The generated data indicate that in teacher education, teachers do not have enough learning experiences concerning philosophy and curriculum theory, that they are interested in having such opportunities, and that they are able to internalize them to a certain degree. Hence, it is recommended that preservice and inservice education should address this need and provide teachers with a broader framework that emphasizes strongly both educational philosophy and curriculum theory.

Although it was observed in this study that not always teachers feel confident to actualize their personal philosophy in a school whose climate represents a very different philosophy from their own, we should not underestimate the power a teacher has once he closes the classroom door behind him. Therefore, it is hoped that the effort to tie theory and practice will bear some fruit in the daily work of a teacher who went through a process of the kind described here. This process should start with teachers but could extend to include principals, administrators and board people. However, more experience is needed with teachers before other educators could take part in such a process.

In brief, teachers can understand educational philosophy and apply it to practice if it is presented to them appropriately. At least the presentation of Dewey's philosophy proved to be worthwhile and successful albeit not without faults. Although this study was concerned with a particular
philosophy and its impact on practice it, nevertheless, sheds light on possibilities to present other philosophies or theories currently not known to or used by practitioners. Maybe it is really true that there is nothing more practical than a good theory.
References


Burrello, L.C. and Orbaugh, T., "Reducing the Discrepancy between the Known and the Unknown in Inservice Education", Phi Delta Kappan, 1982, 63(6), 385-388.


Appendix A.
Criterion 19

Skills and drill are related to thought so that ideas or required procedures can be related to appropriate ends (goals to be achieved). Words are related to experience -- to things in the world; empty verbalism is discouraged. Information is not severed from thoughtful doing -- the link between ideas and intelligent behavior.

Explanation

Probably no ideas in fundamental educational theory have been overlooked and misused as much as these three: (1) the purpose (therefore the limits) of activity; (2) the supreme value given to intelligence; and (3) the place of skills and drill.

In the theory, skills/drill have a commonsense place that they rarely achieve in practice. The basic idea is this: skills and drill are necessary and good if they make more efficient sub-routines associated with thought (a context larger than the skill itself).

The clearest example is student drill in math. If students are skilled in solving equations and master the technique, they can then solve complicated problems, in which the attention is focused upon setting the equation rather than the technical part of solving it.

Skills and drill are undesirable, on the other hand (1) when they become ends in themselves, and (2) when they are disassociated from their use in intelligent action. Hence, memorizing the multiplication tables simultaneously with the larger act of multiplying by two-digit numbers, makes multiplying more efficient without reducing its meaning (i.e., the tables are learned in the context of multiplication). Pure memorizing, without that kind of connection, is misdirected energy.

Another such misapplication is an extreme phonics program in reading which teaches through a fragmented letters-sounds-word approach; the approach is unintelligent because the learner has little understanding of "phonics" in the larger and more important reading act. Phonics taught within the context of reading sentences is appropriate skill and drill because the sentences provide a context of meaning for the words. Hence, sound/symbol correspondences serve as clues for the words within the larger context of the sentence (for example, "blue" and "blew" derive their meaning in the context of a sentence).

Let's take something not overlain with years of pro and con associations -- like safely landing an airplane -- a process that involves
clear sub-skills (i.e., skills more discrete than the complete act of landing safely). Most fatal accidents occur on "final" — the final turn in the landing pattern to line up with the runway. Any plane will stall and spin if the pilot does not maintain (1) proper airspeed (an idea which is part of the sub-skill), and (2) proper balance between the degree of bank and the rudder (a coordinated turn). (Coordinated turns are difficult to do close to the ground; (the proximity of the trees is a prime cause of anxiety.) So these skills must be practiced at altitude (drilled) until they become automatic. Here drill makes sense because the skill is not removed from the context in which it has meaning — landing safely.

If most schools were teaching this sub-skill, however, the fatality rate would probably go up because they would: (1) give a chapter to read on coordinated turns followed by 10 multiple-choice questions; (2) forget the use of the sub-skill so that the learner has no "foresight of the ends to be served" and thus is less able to use the skill intelligently; and (3) provide no real or simulated experience in "landing" because (a) 42-minute periods preclude it, (b) practice is not theory and therefore not appropriate to the academic curriculum, and (c) it is too expensive.

To drill for skill is not a rallying point for an educational movement. The only criterion is whether such drill is likely to lead to subsequent intelligent action.

Criterion 23

What is involved in knowing something is not underestimated. (What does it mean to know history or to be able to read?) To know must include the quality of means used to achieve ends. To know means active thinking in the sense that more is learned than taught.

Explanation

Certainly knowing occurs above the level of factual recall, the level of facts unrelated to larger concepts, or the level of routine operations. We can best convey the spirit of what is involved in learning by citing Jerome Bruner's recollection of a notable event in his student days (Bruner, 1966):

You will quite properly have guessed that I am about to urge that reading be rescued from its passivity and turned into a more active enterprise. Indeed, I do believe just
that. But it is not a new theme. We have all discovered it 
(with delight) on our own. As a student, I took a course
with I. A. Richards, a beautiful man and a great necromancer.
It began with that extraordinary teacher turning his back to
the class and writing on the blackboard in his sharply angular
hand the lines: Gray is all theory;
Green grows the golden tree of life.

For three weeks we stayed with the lines, with the lines
with the imagery of the Classic and Romantic views, with the
critics who had sought to explore the two ways of life; we
became involved in reading a related but bad play of Goethe's,
Torquato Tasso, always in a state of dialogue though Richards
alone spoke. The reading time for eleven words was three weeks.
It was the antithesis of just reading, and the reward in the
end was that I owned outright, free and clear, eleven words.
A good bargain. Never before had I read with such a lively
sense of conjecture, like a speaker and not a listener, or
like a writer and not a reader (pp. 103-104).

John Holt (1964) says that the problem is not to get students to
ask us what they don't know but to make them aware of the difference
between what they know and what they don't: "...not a child in a
hundred knows whether or not he understands something, much less, if
he does not" (p. 103). Among the many good examples Holt gives, the
following may illuminate what knowing might mean in fourth grade math.

During a visit, two friends asked me to do some math
with their ten-year-old, who was having some trouble. I
said OK; the child and I have been friends for many years,
and I thought I might be able to find out something about
her way of thinking about arithmetic problems. I began
with mental arithmetic. I planned to ask her 2 x 76, and
when she had given the answer, 2 x 77. I wanted to see
whether she would treat the second problem as if it was
brand new. But I was set back when she told me that
2 x 76 was 432.

After some mental calculating, I saw that in doing
this problem in her head, she had multiplied the 2 by the
6, and then the 7 by the 6; in short, that she had multi-
plied 6 x 72 — correctly, by the way. I asked her to do
it again, and again she said 432, showing how strong is our
tendency to repeat our own errors, to keep going in the
track we have already made.

I then said, "What is 2 x 100?" She said, "200."
I asked for 2 x 90. "180." "2 x 80?" (Pause.) "160."
"2 x 76?" "432." "2 x 100? 200. 2 x 200? 400."
Here she stopped, looked at me searchingly, and then said, "Now wait a minute." She ran to get pencil and paper, saying, "This doesn't make sense; I'm going to figure this out." On the paper, she worked out that 2 x 76 was 152.

Something very important happened when she said, "Now wait a minute." She was seeing, perhaps for the first time, that we can ask of an answer to a problem not just "Is it right?" or "Is it wrong?" but "Is it sensible?" and that we can often see, without yet knowing the right answer, that the answer we have doesn't make any sense, is inconsistent with the other things we know to be true.

After a little more work she went to bed, pleased with what she had done" (pp. 107-108).

This internal insight of knowing, that which the teacher has as well as the ten-year-old girl, is what this criterion aims at. How many of our students, particularly those 15 years or older who are developmentally able to deal symbolically with words and numbers, could say on graduation: "I 'know outright' (Wordsworth, Emerson, algebra, or the social reform movements of the nineteenth century)."? (How many of our students study language but never are led to understand the basic nature of language or the symbolic process?) Isn't it a great loss that so few can make such a statement? Is this condition efficient or desirable? Is this condition an endorsement of present processes in schools? Why do so few people raise the question?
Appendix B.
2. The objectives of instruction (teacher's curriculum and/or learner's) value both "product" (what is to be learned) and the "process" (how it is learned; what the students and teacher do, classroom atmosphere, quality of the learning materials used, etc.).

3. Objectives are tentative and emerge from the learning-teaching process; objectives can be modified by the teacher or the learner as the process of learning unfolds.

4. The objectives developed by the teacher and student should be those most likely to free learning to go beyond the objectives themselves.

5. Most of the objectives reflect the basic needs of the learner — make sense to him/her on personal grounds.

6. The objectives are worthwhile in and of themselves, in their own immediate having.

9. The teacher, as the mature orchestrator of the classroom environment, sets the logical order of the content and tries to relate the content to the learner's needs, goals, personal view of it; this is accomplished by building from concrete experiences based on the learner's present perceptions of the subject to a more logical and conceptual view.

10. The subject matter does not swamp the learner with information easily made available by technology (computer retrieval, printed materials, films, etc.). Instead, information is used selectively to assist in learner inquiry (problem-solving) or in some other learning task (e.g., preparing an oral report/presentation).

11. The subject matter reflects the principles that specific subject content must be related to the broader social life, so that the result is social content—not subjects-to-be-learned.

12. Essential content is that content most widely shared in the society—that is, knowledge that is of general significance. Technical knowledge related to specialized groups is of less importance (e.g., science for engineers or physicians, statistics for psychologists).

13. Content is related to the needs of present community life (local and regional); content has the intention of improving the quality of future living (both social and individual).
16. Experience in doing something with foresight (with an end in view) and reflecting on the consequences to see the connections between otherwise unrelated ideas and events. Thinking is not separated from the activity involved in trying to reach the end and is in experience, not outside it.

Thinking OFTEN related to activity involved in trying to reach the end
Thinking SOMETIMES related to activity involved in trying to reach the end
Thinking SEPARATED from activity involved in trying to reach the end

7. Testing ideas—trying them out in one’s present experience—gives ideas their reality and helps us to understand them more deeply. Without testing, ideas do not flow from the realm of the abstract to the equally important realm of experience. Thought occurs when things are problematic—uncertainty about something to which one attaches value. Inquiring is primary; acquiring is secondary.

Testing of Ideas within learner’s experience is PROMOTED
SOME opportunities to test ideas within learner’s experience
SEPARATION of ideas and practical affairs from activity involved in trying to reach the end

21. Problems are selected for the purpose of thoughtful and meaningful analysis so that they are (a) within the experience of the learner at the start of the learning, (b) related to the problems of ordinary life, and (c) require thought i.e., reflection about the consequences of acts taken to solve a problem.

Instruction OFTEN selects meaningful problems
Instruction allows for SOME selection of meaningful problems
Instruction selects problems which are NOT meaningful

22. Method recognizes that intellectual effort is always accompanied by emotional and moral efforts. One cannot isolate the mind from the emotional and moral functions.

Cognitive and affective functions are INTERRELATED
LIMITED interrelations between cognitive and affective functions
Cognitive and affective functions are SEPARATED

23. What is involved in knowing something is not underestimated. (What does it mean to know history or to be able to read?) To know must include the quality of means used to achieve ends. To know means active thinking in the sense that more is learned than taught.

Method OFTEN promotes active thinking that transcends formal instruction
Method SOMETIMES promotes active thinking that transcends formal instruction
Method NEVER promotes active thinking that transcends formal instruction

24. The teacher and principal are encouraged to create a total school-environment for learning that cultivates the intelligence and sensitivities of learners, teachers, and administrators.

Elements in the teaching environment are CONSCIOUSLY Interrelated
Elements in the learning environment are CONSCIOUSLY Interrelated
Elements in the learning environment have NO Interrelations
### Summary Table & Profile of Ili (Short Version)

(Refer to Rating Explanation Sheet for details of scoring procedure. For each criterion put an X, then join the X's with lines to form a profile.)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
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<tbody>
<tr>
<td>2. product and process</td>
<td>4</td>
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<tr>
<td>3. flexibility</td>
<td>4</td>
</tr>
<tr>
<td>6. dynamic</td>
<td>5</td>
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<tr>
<td>7. learner's personal needs</td>
<td>3</td>
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<tr>
<td>8. intrinsic value</td>
<td>3</td>
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<tr>
<td>9. learner's present perception</td>
<td>4</td>
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<tr>
<td>11. information</td>
<td>5</td>
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<tr>
<td>12a. broader social life</td>
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<tr>
<td>b. general significance</td>
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<tr>
<td>c. community life</td>
<td>2</td>
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<tr>
<td>16. continuity of experience</td>
<td>5</td>
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<td>17. thoughtful activity</td>
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<tr>
<td>18. testing of ideas</td>
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<tr>
<td>19. skill and drill</td>
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<tr>
<td>20. meaningful problems</td>
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<tr>
<td>22. cognition and affection</td>
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<tr>
<td>23. active thinking</td>
<td>5</td>
</tr>
<tr>
<td>24. interrelations of elements</td>
<td>4</td>
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Perceived total score (range 18-90) 76